DOT Specification [1]	Insulation	Bursting pressure (psig)	Minimum plate thickness (inches)	Test pressure (psig)	Bottom outlet	Bottom washout	References (179.201 - ***)
103A–ALW	Optional	240	1/2	60	No	Optional.	
103AW	Optional	240	179.201–2	60	No	Optional.	
103ALW	Optional	240	1/2	60	Optional	Optional	6(a).
103ANW	Optional	240	179.201–2	60	No	Optional	6(d).
103BW	Optional	240	179.201–2	60	No	No	6(b), 3.
103CW	Optional	240	179.201–2	60	No	No	6(c), 4,5.
103DW	Optional	240	179.201–2	60	Optional	Optional	6(a), 6(c), 4, 5.
103EW	Optional	240	179.201–2	60	No	Optional	6(c), 4, 5.
103W	Optional	240	179.201–2	60	Optional	Optional	6(a).
104W	Yes	240	179.201–2	60	Optional	Optional	6(a).
111A60ALW1	Optional	240	1/2	60	Optional	Optional	6(a).
111A60ALW2	Optional	240	1/2	60	No	Optional.	
111A60W1	Optional	240	7/16	60	Optional	Optional	6(a).
111A60W2	Optional	240	7/16	60	No	Optional.	
111A60W5	Optional	240	7/16	60	No	No	3, 6(b).
111A60W6	Optional	240	7/16	60	Optional	Optional	4, 5, 6(a), 6(c).
111A60W7	Optional	240	7/16	60	No	No	4, 5, 6(a).
111A100ALW1	Optional	500	5/8	100	Optional	Optional	6(a).
111A100ALW2	Optional	500	5/8	100	No	Optional.	
111A100W1	Optional	500	7/16	100	Optional	Optional	6(a).
111A100W2	Optional	500	7/16	100	No	Optional.	
111A100W3	Yes	500	7/16	100	Optional	Optional	6(a).
111A100W4	Yes (see 179.201–11).	500	7/16	100	No	No	6(a), 8, 10.
111A100W5	Optional	500	7/16	100	No	No	3.
111A100W6	Optional	500	7/16	100	Optional	Optional	4, 5, 6(a) and 6(c).
111A100W7	Optional	500	7/16	100	No	No	4, 5, 6(c).

[1] Tanks marked ''ALW'' are constructed from aluminum alloy plate; ''AN'' nickel plate; ''CW,'' ''DW,'' ''EW,'' ''W6,'' and ''W7'' high alloy steel or manganese-molybdenum steel plate; and those marked ''BW'' or ''W5'' must have an interior lining that conforms to § 179.201–3.

[Amdt. 179–52, 61 FR 28680, June 5, 1996, as amended by 66 FR 45390, Aug. 28, 2001]

§ 179.201–2 Minimum plate thickness.

(a) The minimum plate thickness, after forming, must be as follows:

Inside diameter of tanks	Bottom sheets	Shell sheets	Expansion dome sheets	2:1 ellipsoidal heads	3:1 ellipsoidal and dished tank heads	Expansion dome heads	Interior compartment heads
	Inches						
60 inches or under	7/16	1/4	5/16	7/16	1/2	5/16	5/16
Over 60 to 78 inches	7/16	5/16	5/16	7/16	1/2	5/16	5/16
Over 78 to 96 inches	1/2 [1]	3/8	5/16	7/16	1/2	5/16	3/8
Over 96 to 112 inches	1/2 [1]	7/16	5/16	7/16	9/16	5/16	7/16
Over 112 to 122 inches	1/2	1/2	5/16	1/2	5/8	5/16	1/2

[1] May be reduced to 7/16 inch when approved steels having tensile strength of 65,000 psi or higher are used.

(b) [Reserved]

[29 FR 18995, Dec. 29, 1964. Redesignated at 32 FR 5606, Apr. 5, 1967, and amended by Amdt. 179–10, 36 FR 21352, Nov. 6, 1971; 67 FR 61016, Sept. 27, 2002]

§ 179.201–3 Lined tanks.

(a) *Rubber-lined tanks.* (1) Each tank or each compartment thereof must be lined with acid-resistant rubber or other approved rubber compound vulcanized or bonded directly to the metal tank, to provide a nonporous laminated lining, at least 5/32-inch thick, except overall rivets and seams formed by riveted attachments in the lining must be double thickness. The rubber lining must overlap at least 1½ inches at all edges which must be straight and be

beveled to an angle of approximately 45°, or butted edges of lining must be sealed with a 3-inch minimum strip of lining having 45° beveled edges.

(2) As an alternate method, the lining may be joined with a skived butt seam then capped with a separate strip of lining 3 inches wide having 45° beveled edges. An additional rubber reinforcing pad at least 4½ feet square and at least ½-inch thick must be applied by vulcanizing to the lining on bottom of tank directly under the manway opening. The edges of the rubber pad must be beveled to an angle of approximately 45°. An opening in this pad for sump is permitted. No lining must be under tension when applied except due to conformation over rivet heads. Interior of tank must be free from scale, oxidation, moisture, and all foreign matter during the lining operation.

(3) Other approved lining materials may be used provided the material is resistant to the corrosive or solvent action of the lading in the liquid or gas phase and is suitable for the service temperatures.

(b) Before a tank car tank is lined with rubber, or other rubber compound, a report certifying that the tank and its equipment have been brought into compliance with spec. DOT–103B, 103BW, 111A60W5, or 111A100W5 must be furnished by car owner to the party who is to apply the lining. A copy of this report in approved form, certifying that tank has been lined in compliance with all requirements of one of the above specifications, must be furnished by party lining tank to car owner. Reports of the latest lining application must be retained by the car owner until the next relining has been accomplished and recorded.

(c) All rivet heads on inside of tank must be buttonhead, or similar shape, and of uniform size. The under surface of heads must be driven tight against the plate. All plates, castings and rivet heads on the inside of the tank must be calked. All projecting edges of plates, castings and rivet heads on the inside of the tank must be rounded and free from fins and other irregular projections. Castings must be free from porosity.

(d) All surfaces of attachments or fittings and their closures exposed to the lading must be covered with at least ⅛-inch acid resistant material. Attachments made of metal not affected by the lading need not be covered with rubber or other acid resistant material.

(e) Hard rubber or polyvinyl chloride may be used for pressure retaining parts of safety vents provided the material is resistant to the corrosive or solvent action of the lading in the liquid or gas phase and is suitable for the service temperatures.

(f) Polyvinyl chloride lined tanks. Tank car tanks or each compartment thereof may be lined with elastomeric polyvinyl chloride having a minimum lining thickness of three thirty-seconds inch.

(g) Polyurethane lined tanks. Tank car tanks or each compartment thereof may be lined with elastomeric polyurethane having a minimum lining thickness of one-sixteenth inch.

[Amdt. 179–10, 36 FR 21352, Nov. 6, 1971, as amended at 66 FR 45186, Aug. 28, 2001]

§ 179.201–4 Material.

All fittings, tubes, and castings and all projections and their closures, except for protective housing, must also meet the requirements specified in ASTM Specification A 262, except that when preparing the specimen for testing the carburized surface may be finished by grinding or machining.

[Amdt. 179–10, 36 FR 21353, Nov. 6, 1971, as amended by Amdt. 179–52, 61 FR 28681, June 5, 1996; Amdt. 179–52, 61 FR 50255, Sept. 25, 1996; 66 FR 45186, Aug. 28, 2001]

§ 179.201–5 Postweld heat treatment and corrosion resistance.

(a) Tanks and attachments welded directly thereto must be postweld heat treated as a unit at the proper temperature except as indicated below. Tanks and attachments welded directly thereto fabricated from ASTM A 240/A 240M (incorporated by reference; *see* §171.7 of this subchapter) Type 430A, Type 304 and Type 316 materials must be postweld heat treated as a unit and must be tested to demonstrate that they possess the corrosion resistance specified in §179.200–7(d), Footnote 2. Tanks and attachments welded directly thereto, fabricated from ASTM A 240/A 240M (incorporated by reference; *see* §171.7 of this subchapter) Type 304L or